GOVERNMENT OF MADRAS.

Secdt. II-28—60,000—4-1-52.

Original for Mysore Govt
Office for Andhra Govt
Mysore Govt

P.A (1956) Department

Endorsement
D.O.
Memorandum
Lodged

No. 48896 K/57

Dated 28/1/52 195

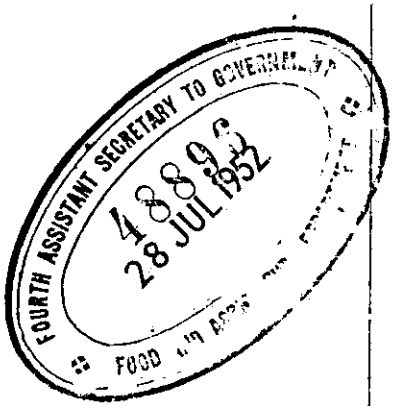
FURTHER PAPERS.

FOR MYSORE STATE

Extract from Pde

Pdl No ~~1400~~ 93

Sub: Agri - Experiments - quarterly report of the Dy. D. A., Thungabhadra Project.



Forward whom Due D.O.

Date Due 25/7/52

Po whom Due Govt

25/7/52

2/

Food & Agri C K/Deptt

Memo No. 48896 K/52 — 1 Dated 11.8.52 Periodicals

Subject: Agriculture Experiments - ~~Quarterly~~ Reports re Dy. D.A. Tungabhadra, for the quarter ended June, 52.

The D.A. is requested to expedite the report on the progress of work done at the Agl. Research Station, Siruguppa for the quarter ended 30/6/52

2/8/52

The D.A. is requested to state when the report on the progress of work done at the Agl. Research Station, Siruguppa in respect of the Tungabhadra Project for the quarter ended 30.6.52 may be expected.

6.8.52.

To the D.A.

Ro. 2/8/52 — 11/8.

1296

Note: The periodical extract overleaf may be perused. D.A. issued on 20/8/52

The draft memo above is submitted for approval.

RO. 13/8/52

2/8/52

6.8.52

10852

Agriculture Department.

From
Sri M.S. Sivaraman, I.C.S.,
Director of Agriculture,
Chepauk, Madras.

To
The Secretary to Government,
Food and Agriculture Department,
Fort St. George, Madras.

No.D.3.Pdl.300/52 dated 22.8.52.

Sir,

Sub: IRRIGATION - Tungabhadra Project - Experiments conducted at Siruguppa - Quarterly report for quarter ending 30.6.52.

Ref: Govt. Memorandum No.48896 K/52-1 dated 11.8.52.

The quarterly report received from the Agronomist, Agricultural Research Station, Siruguppa is under examination and the same will be submitted to Government shortly.

55489

Sd/. K.C. Naik,
for Director of Agriculture.

/ by order/

Gazetted Assistant.

ask.22.8.

5

AGRICULTURAL DEPARTMENT

From
Sri M.S.Sivaraman, I.C.S.,
Director of Agriculture,
Chepauk, M a d r a s.

To
The Secretary to Government,
Food and Agriculture Department,
Fort St. George, Madras.

No.D.3.Pdl.300/52 dated 26.8 52.

56763

FOURTH ASSISTANT SECRETARY TO GOVERNMENT :: 29 AUG 1952 :: AGRICULTURE DEPARTMENT

ASSISTANT SECRETARY TO GOVERNMENT :: 74205 :: 4 SEP 1952 :: PUBLIC WORKS DEPARTMENT

Sir,

Sub:Irrigation - Tungabhadra Project - Experiments Conducted at Siruguppa - Quarterly report for quarter ending 30.6.52.

-:-

I submit herewith a copy of the report for the quarter ending 30.6.52 on the progress of work done at the Agricultural Research Station, Siruguppa in respect of Tungabhadra Project.

(sd) M.S.Sivaraman.
for Director of Agriculture.

Copy to:Secretary, Board of Revenue, Chepauk, Madras with enclosure.

1-2A-48896 k/52-2 AA(K)Dept By Order-

4/9/52 Submit for perusal. May be lodged after perusal by P.W. Dept.

27/8 DM 29.8. 2.9.52

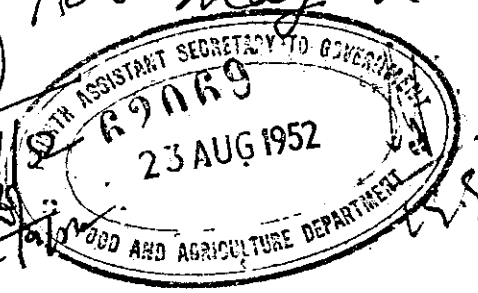
P.W. GAZETTED ASSISTANT

6

PW(N)

Ag

Please see the notes of Fr A at the bottom of p. 6 ante. After perusal of the quarterly report ending with 31.3.52, at pp. 7-21 infra, the file may be returned to Fr A.



11/9/52

The notes of P.W. above may be perused. Draft (K) Dogra

The file may be lodged as ordered already at X on p. 5 above. For orders. PWD dtd 22.9.52 No 74205-N/52-1

22.9.52

Seasons and Rainfall:- A total rainfall of 7.76 inches was received during the quarter in 18 rainy days as against 4.76" received in 10 days during the corresponding period of the previous year. The maximum and minimum temperatures recorded were 108.4°F and 70.0°F respectively during the period under report. The dry and hot weather prevailed during the months of April and May made it a necessity to irrigate paddy, onions, sugarcane and fodder maize frequently. It facilitated the harvest and threshing of paddy, picking of cotton kapas and carting of manure to the fields. The rains received in the tail end of the month of May was very helpful to speed up the preparatory cultivations of all crops in wet lands and in the bulk fields of garden lands. The season thus was favourable to the preparatory cultivations and sowing of green manure crops and fodder crops.

Result of late cropping:- The important crops grown in the late season are H.A.11 cotton, chillies and ragi, onions in dry irrigated and paddy in wet lands. The yields and profits of the crops are furnished in the tabular statement below.

No.	No.	Crop	Yield	Cost of cultivation.	Gross value.	Net profit.
	acres					
I.7, 8, 16.	0.50	Cotton	77	42-14-0	71-10-0	28-7-0
IV-1	0.50	Onion.	1750	70-0-0	154-4-0	78-10-0
II.3.b.	0.00	Groundnut.				
		Paddy	15,700	2107-4-0	337-11-0	1829-9-0
		Straw	3150			
		Cash & Kind	200			

It is seen from the data given above that crops with good profit can be raised even irrigation in black soils without any deterioration in soil conditions.

Early cropping in 1952-53 season:- On the receipt of 3.73" of rain in the month of May, the preparatory cultivation pushed through as a result of which 76.61 acres ploughed, 43.8 acres harrowed, 37.66 acres were thrown into beds and channels for sowing early crops. A total area of 18.50 acres were sown during the quarter as detailed below.

Onion.	..... 1.65 acres.
Cucumber.	..... 7.41 "
Cucumber and Pillipesara	..... 3.10 "
Fodder Maize.	..... 1.1[illegible] "
Fodder Jowar.	..... 0.50 "
Cotton Intercrop	..... 1.50 "
Paddy nursery	..... 0.30 "
Total.	18.56 acres.

Irrigation, cultivation for all the important crops was given during the period under report.

Experimental cropping.

Cotton varietal trial:- 2900, 72, 37, H-35, Uddir, Jaydhar were tried out chemicoole type for the project area. The result was statistically significant. Uddir has given the maximum yield of 385 lbs. per acre.

Varieties.	2900	72	37	H.35.	Uddir.	Jayadhar
Seed cotton yields in lb.	292	287	333	244	385	371

2) Cambodia cotton observation trial:- This experiment was conducted with seven varieties of cambodia cotton to find out the highest yielder. The results are as follows.

S.No.	Name of the variety.	Acre yield in lbs.
1.	2705-1	429
2.	Lahari 1	416
3.	I.II-40-594	759
4.	[illegible]0	677
5.	I.II.4[illegible]-79.	[illegible]
6.	[illegible].2.	803
7.	[illegible].	479

[illegible] yielded by I.II.40-[illegible] lbs per acre.

3) Cotton varietal trial:- Five varieties of cotton, viz., T.N.V.1, T.N.V.2, T.N.V.3, Co.1, were tried in this trial to find out the suitable ones to this tract. The results are as follows.

Varieties.	T.N.V.1.,	T.N.V.2.	T.N.V.3.	Co.1.
Acre yield in lbs.	186	227	100	25

The variety T.N.V.2. has given the maximum yield of [illegible]7 lbs. per acre.

4) Four year course rotation trial:- The 4th course of the four year course rotations trial is coming to the 4th year 1951-52. The trial was laid out in 1948-49 and the first 3 years course. The rotation, viz., Gbohnut rice, Groundnut rice, Jowar cotton is found to be most economical rotation both in dry and wet tracts. This rotation trials are being continued to confirm the above results.

5) Paddy varietal trial:- One of the important problems in the selection of suitable varieties is lack of information in Coastal-Nellore to suit the climatic conditions. Hence it is very much required to find out the varieties suitable for the tract. With this object in view the varietal observation trial is conducted for the 2nd year. The observations in the [illegible] season as well as in Januvary May season are given below.

1) Five varieties viz., Co.4, Co.13, T.N.1, T.N.18 and B.34 (Pullagenna Vilangure) were tried in the season and Co.4 was found to be best. It has given the maximum yield of 1671 lbs. per acre.

2) Long duration varieties Co.4, Co.19, Co.25, T.N.1, T.N.13. were tried in three series in the months of September-October 1951 and their performances noted below.

S.No.	Name of the Variety.	Acre yield in lb. planted on 17.9.51	planted on 1.10.51.	planted on 15.10.51.
1.	Co.4.	1082	1505	1555
2.	Co.19.	~~516~~ 586	173	644
3.	Co.25.	497	417	507
4.	T.N.1.	398	294	491
5.	T.N.13.	~~[illegible]~~ 895	637	740

Conclusions:- 1) Co.2. and A.D.T.15. have given higher yields in all the series.

2) Planting on 15.10.51 is preferable since the varieties in the last series have given higher yields.

3) The short duration paddy strains Co.10, Co.20, A.D.T.15, X8364 (pullasan a vadlu culture) were tried in January-May season. A.D.T.15. has given the maximum yield of 1075 lbs. This trial will be repeated during 52-53.

S.No.	Strain No.	Date of transplanting.	Date of harvest.	Yield in lb.
1.	Co.17.	12-2-1952	20.5.52	37[illegible]
2.	Co.20.	"	"	500
3.	A.D.T.10.	"	"	1075
4.	A.D.T.15.	"	"	4[illegible]
5.	X8364	"	"	[illegible]

6) Manurial experiment on paddy:- The object of this experiment is to find out a suitable manurial schedule for the extensive paddy crop grown on the irrigated black soils. This experiment was conducted on late crop paddy with the treatments 1) No manure (2) 150 lbs. ammonium sulphate plus 1½ cwt. super phosphate per acre (3) 75 lbs. of ammonium sulphate plus 200 lbs. of groundnut cake plus 1½ cwt super phosphate per acre. The results of yield were analysed statistically and found to be significant over the control. There is no difference between series I & series II.

7) Super phosphate experiment on paddy:- This experiment was conducted on late crop paddy to find out the relative merits of semi acidulated phosphate and super phosphate on paddy crop with the following six treatments.

1) Control. (2) groundnutcake at 40 lbs. N per acre.
3) Groundnut cake at 40 lbs. N per acre plus super phosphate at 80 lbs. P_2O_5 (Broadcast).
4) Groundnut cake at 40 lbs. N per acre plus semi acidulated phosphate at 80 lbs. P_2O_5 (Broadcast).
5) Groundnut cake at 40 lbs. N plus super phosphate at 80 lbs. P_2O_5 (Placed).
6) Groundnut cake at 40 lbs. N plus semi acidulated phosphate at 80 lbs. P_2O_5 (Placed).

The results of yield were analysed statistically and found to be significant.

Particulars	1.	2.	3.	4.	5.	6.
Grain yield per acre in lb.	1054	1012	1544	1440	1440	1256

Groundnut cake at 40 lbs. N plus super phosphate at 80 lbs. P_2O_5 (Broadcast) was found to be superior over groundnut cake at 40 lbs N plus semi acidulated phosphate at 80 Lbs. P_2O_5(placed) and control and groundnut cake at 40 N per acre.

8) Green manure trials in black soils:- In order to [illegible] the green manure to black soils, an experiment was laid out with treatments 1) No manure (2) [illegible] manure [illegible] (3) [illegible] (4) at [illegible] per acre (5) at 75 [illegible] per acre.

Hingha was sown insite plot of the above experiment on 30.5.[illegible] and in sup[illegible]r plate at 20 lbs per acre by rl[illegible] to supply green leaf for other treatments, raising a [illegible] in 1.40 acres in one of the plots. The growth of Hingha was very [illegible] also in cotton (H.A.11) will be sown this year for this experiment.

MISCELLANEOUS WORK.

9) Flooding Trial:-It was conducted to find out the effect of submerging the seedlings of Hingari jonna when they are 10 days old with and without fish oil rosin soap on the incidence of the cholam shoot borer fly Atherigona indica, which is a serious pest on Hingari jonna in this tract. Two varieties of jonna namely, Co.9. and M-47-3 were selected for this experiment. The results were analysed.

It is seen that there are no statistically difference among the various flooding treatments in the incidence of fly in the case of M-47-3 while the fly attack is less in various treatments than in control. The same was not substantiated by the yield data.

In Co.9. variety no statistical difference were found either in the incidence of the fly or in the yields between the different flooding treatments and control.

10) Thick sowing and subsequent thinning:- ~~and thick~~ sowing experiment on jonna.

The experiment was laid out to find out the economical advantages of adopting of thinseed rate of 24 lbs. per acre and subsequently thinning over a thinseed rate of 12 lbs. per acre without further thinning. Two varieties of jonna Co.9. and M-47-3 were tried. The incidence of the fly was recorded upto 4 weeks. The thick sown plot was thinned after the 4th week by removing the fly attacked plants and some excess plants. The results of the trial are as follows.

S.No.	Treatment.	Variety L-47-3. % of attacked seedlings.	Acre yield in lb. Grain	Straw.	Net profit over this sown plot.	% of attacked seedlings.	Variety Co.9. Acre yield in lb. Grain	Straw.	Net profit over this sown plot.
1.	Adopting a thinseed rate 12 lbs.	40	771	3734		92	605	2074	
2.	Adopting a high seed rate 24 lbs.	44	888	4010	15-8-0	94	640	2283	[illegible]

Conclusions:- In both the varieties thick sown plots have given higher yields. It thus resulted that there was an net profit of Rs.15-8-0 in the case of L-47-3 and Rs.3-0 in the case of Co.9. after meeting the cost of extra seed rate and the cost of subsequent thinning.

11) Control of Jassids:- This experiment was laid out to find out the effective control measures of cotton jassids which are mainly 1) DDT 0.05% spray (2) DDT 0.1% spray (3) [illegible] (4) [illegible].

1) In controlling the [illegible]

treatments with DDT are superior to the control. There were no differences between sprays and dusts of DDT in controlling the jassids.

11) Yields:-The treatments DDT 0.05% spray and 0.1% spray were found to be superior while no difference were found between the control and DDT 5% dusting treatment.

12) Control of aphids on cotton:- The aim of the experiment is to find out the effective and economical control measure of aphis on cotton. For this purpose DDT and BHC 5% dusts and sprays at 0.5% and 0.1% were tried and compared with tobacco sprays control.

It is seen that sprays at 0.05% and 0.1% concentration are significantly superior as tobacco spray in controlling the pest over other treatment.

13) Control of boll worms of cotton:- This experiment was laid in order to find out the way and means of controlling the boll worms of cotton, with 11 treatments. 1) DDT 5% dust, (2) BHC 5% dust, (3) DDT 0.1% (4) BHC 0.05% spray, (5) DDT 10% dust (6) BHC 10% dust, (7) DDT 5% plus sulphur (1:1) dust (8) DDT 10% plus sulphur (1:1) dust (9) 3:10:20 mixture of ~~BHC~~ BHC.~~plus~~ 5% plus DDT 5% and sulphur. (10) 3:10:20 Mixture of BHC 10%, DDT 10% sulphur (11) Agrocide cotton dust were tried and compare with control. The results were analysed and found to be significant.

1) The boll shedding is less in plot treated with agrocide cotton dust than in control and DDT 0.1% spray treatment.

2) The percentage of ~~boll~~ bad kapas is found tobe significantly lower in the treatments DDT 10% dust and 3:10:20 mixture of BHC, 5%, DDT 5% and sulphur than in the control and BHC 0.05% spray.

3) In ~~conclusion~~ connection with the yields the result is ~~not~~ in favour of any particular insecticide.

14) Control of onions thrips:-The trial was conducted with BHC 0.1% and 0.05% sprays giving a fair trial to DDT 0.1% spray and BHC 5% dust and compared with that of control. The results are as follows.

S.No.	Treatment.	Acre yield of bulbs in lb.	Percentage on control.
1.	BHC 0.1% spray.	12150	135
2.	BHC 0.05% spray.	11050	123
3.	BHC 5% dust.	11185	124
4.	DDT 0.1 spray.	10650	118
5.	Control.	9000	100

Conclusion:- The efficiency of the insecticides is judged on the basis of acre yields of bulbs. The treatment BHC 0.1% has given 35% increased yield over the control.

Miscellaneous:- Bhagawadi Demonstration Farm:-

44.4 acres were tentatively agreed by ryots to be sown under seed farms conditions to multiply Co.5. jonna seed in the Rungari season to supply the nucleus seed thus obtained to the project area in the year 53-54. With the receipt of rains received in the months of May, an area of 27.31 acres was sown with Co.5. cholam under seed farm conditions in the first fortnight of June. During the period under report, 33 ~~rain~~ gits

19

were covered with earth by ryots before explaining [illegible] tenure maps.

2400 cuttings of Ipomea carnea and Gliricidia maculata cuttings and Subabul seedlings were planted on the bunds of irrigation channels for green manure purpose. Prosopis juliflora seed was sown on the field bunds along the road side.

Supervising Committee:- The Supervising Committee of the Agricultural Research Station, Siruguppa met on 21-5-52 under the presidency of District Collector, Bellary and reviewed the results of late cropping in Agricultural Research Station, Siruguppa and Bhagawadi Farm.

B.T./-16.7.

B. Rajarathnam 17/7/52
Agronomist,
Agricultural Research Station,
Siruguppa.

17/7/52

SUMMARY.

1) The season was favourable for the early crops.

2) [illegible] for [illegible] quarter.

3) 18.52 acres of early crops were sown of which a major area was devoted to green manure crops.

4) The results [illegible] may be shown that Jamoodia has yielded an average yield of [illegible] lbs. per acre.

5) The average yield of 1855 lbs of cleaned wheat per acre was obtained.
Early cotton gave yields of [illegible] acre yield of 10,795 lbs.

6) From the [illegible] conducted.
a) A.S.D.W. paddy was found suitable for January-May season.
b) [illegible] paddy varieties were found to be promising for October-March season.
c) A.D.T.18 was found to be best of the short duration varieties tried in October-March season.
d) Of the eight red gram varieties tried Udgir has given the maximum yield of 395 lbs. per acre.
e) The results of the manurial experiments on paddy was significant over [illegible] control.
f) The rotation green manure followed by wheat, Groundnut-red gram, Jonna [illegible] is found to be most economical rotation both in deep and shallow soils.
g) Cambodia cotton T.C.V.2. has given the maximum yield of 827 lbs. per acre.
h) Cambodia cotton T.C.2. has given the maximum yield of 805 lbs. kapas per acre followed by L.H. 4C-5-4 with 759 lbs. per acre.

4) [illegible] physico-mechanical reaction of black soil to irrigation, the effect of irrigation on the [illegible] and the effect of irrigation on the [illegible] of deep black soil were continued on the soil [illegible] and [illegible] sent to Government Agricultural Chemist, Coimbatore for analysis.

7) [illegible] tion honoured [illegible] of [illegible] the higher yielding varieties of Jonna has [illegible] to solve the problem of fly attack to some extent.

8) [illegible] 0.05% spray was found to be effective in controlling the jassids on cotton.

9) A total area of 27.31 acres was cropped with Co.5. cholam in the award farm under seed farm conditions for the seed multiplication. The nucleus seed thus obtained will be supplied to the project area in the year 53-54.

10) The supervising Committee of the Agricultural Research Section, Siruvani visited once and reviewed the results of experiments.

P. Rajaraman
Agricultural Chemist. 17/7/54

Food & Agri (K)

6-1355 K/52

16 x 52

20/9/52

Pdl no 98

Agri. Experiments – Quarterly Report of Dy. D. A Thungabhadra project.

Due from the D. A.

Date Due 15. x. 52.

To Govt.

Date Due 15 x 52

16/52

24

Food + Agri (K) Dept

Memo No. 67395/K/52-1 Dated 27-10-52

Subj: Agriculture — Experiments — Report of the Dy. D.A. Hungabbera project for the quarter ended Sept 52 — Calling for

The D.A. is requested to state when the report on the progress of work done at the A.R. station, Siruguppa, in respect of the T.B. Project for the quarter ended Sept 52 may be expected.

22/10/52.

To the D.A.

Rep. 12/11/52

Note. The periodical extract overleaf may be perused. The draft memo above is submitted for approval

22/10/52.

1c

25 5 52

AGRICULTURAL DEPARTMENT.

From

Sri M.S. Sivaraman, I.C.S.,
Director of Agriculture,
Chepauk, Madras 5.

To

The Secretary to Government,
Food and Agriculture Department,
Fort St.George, Madras.

No.D.3.Pdl.300-52 dated 1-11-52.

7413

Sub:- Irrigation - Tungabhadra Project - Experiments conducted at Sirugunpa - quarterly report for the quarter ending 31-10-52.

Ref:- Government memorandum No.67355-K-52-1 dated 27-10-52.

P.2 above ...

The quarterly report received from the Deputy Director of Agriculture, Cuddapah has been found to be defective and I have, therefore, called for a revised report. I shall submit the report to Government soon after receipt.

SD. T. NATARAJAN.
for Director of Agriculture.

-By Order-

Gazetted Assistant.

dr.3.11.

Submitted for perusal.
R.O. 28/11/52
10.11.52

2

27/5

Agricultural Department.

From
Sri M.S. Sivaraman, I.C.S.,
Director of Agriculture,
Chepauk, Madras.

To
The Secretary to Government,
Food and Agriculture Department,
Fort St. George, Madras.

No.D.3.Pdl.300/52 dated 28-11-52.

29152

Sub: Irrigation - Tungabhadra Project - Experiment conducted at Siruguppa - quarterly report for Quarter ending 30.9.52.

Ref: Govt. Memorandum No.67355-K/52-1 dated 27-10-52.

I submit herewith a copy of the report for the Quarter ending 30-9-52 on the progress of work done at the Agricultural Research Station, Siruguppa in respect of Tungabhadra.

SD/. M.S. Sivaraman,
Director of Agriculture.

Copy to Secretary, Board of Revenue, Chepauk, Madras (with enclosure)

15/12/52 by order/

Gazetted Assistant.

ask.3.12.

F.A. No. 67355-K/52-2
15/12/52

28

PW (N)

10731 · N/52

Ag.

The progress report for the quarter ending 30.9.52 on the work done at the Agricultural Research Station, Singanpa at pp 7-19 infra may be perused & the file returned to F.&A.

19/12/52

19/12/52

22/12

A.S.

May now be lodged as already ordered at ☐ on p.5 ante.

30/12/52

31.12.52.

F.&A. (E)

2/1/53

PWD(Con) No. 2317 · N/52-1

30 DEC 1952

THIRD ASSISTANT SECRETARY TO GOVERNMENT
FOOD AND AGRICULTURE DEPARTMENT

12.52

82-3-68

'DEPARTMENT OF AGRICULTURE'

29

From
Sri C.Rajaratnam, B.Sc., (Ag).,
Agronomist, Agrl. Research Station,
Siruguppa P.O. (Bellary Dist).

To
The Secretary,
Food and Agriculture, Department,
Madras.

Through
The Deputy Director of Agriculture, Cuddapah and
The Director of Agriculture, Madras.

Pdl. No.10/Q/52 dated 9-10-52.

Sir,

Sub:-REPORTS AND RETURNS- Agricultural Research Station- Siruguppa- Tungabhadra Experiments- Quarterly report- submission of.

...

I submit below the report of work done, during the quarter ending 30.9.52.

2.CHARGE:- I remained in charge of the Agricultural Research Station, during the quarter under report.

3.TOURS:- I was on tour for 32 days during the quarter and visited Bagawadi Demonstration Farm, Bellary, Bairadevanahalli, Hosur and Coimbatore, for inspection, to meet Deputy Director of Agriculture, Cuddapah, District Agricultural Officer and District Collector, Bellary, inspection of Buildings for the proposed demonstration Farm, to select work animals and to attend College day and departmental Officers' conference respectively.

4.SEASON:-The quarter under report has recorded a total rainfall of 7.21" in 18 days as against 10.78" in 22 days during the corresponding period of the previous year. The maximum and minimum temperatures recorded in the quarter, were 98.6°F and 69.5°F respectively. The maximum wind velocity during quarter was 9.1 miles per hour as against 8 miles per hour during the corresponding period of the last year.

The south west monsoon started well in July, bringing 3.25" in July. and Mungari crops were sown with ease with the help of that rain and the then standing green manure crops were benefited. The rainfall received during second fortnight of July (0.66") and 0.87" in the first fortnight of August and 1.32" received in the second fortnight of August was not much useful to the standing crops and all the crops had to be irrigated. The first fortnight of September recorded no rainfall and the crops like Groundnut-Red gram mixture and Cotton had suffered and the fields developed cracks and Groundnut withered in patches here and there. Even though, the engines were put to work throughout day and night, all the crops could not be irrigated and crops like Groundnut-Red gram and Cotton missed an irrigation. The later half of September brought in 1.11" of rain which was beneficial to the withering crops to some extent. In general, the season though had a good begining, was not much favourable to the crops and the crops like Groun nut and Red gram suffered for want of water.

EARLY CROPPING:- In spite of the bad distribution of rainfall, the mungari crops like Jonna, Groun nut-Red gram, sweet potato vegetables, fodder crops, maize, paddy were sown in time as per the cropping scheme. Late crops like Cotton and Hingari jonna, were also sown during the quarter under report. Fodder crops, maize, and jonna were harvested and they gave an acre yield of 12760 lb. and 12924 lb respectively. A total area of 41.89 acres was sown with Jonna, paddy, Fodder, Vegetables, cotton, and Hingari jonna, during the quarter under report.

I.Experimental Cropping:-A. Replicated trials.

I. Manurial Trials:-

1. Green manure experiment:- The experiment was laid out to assess the optimum dose of green manure, in black soils of Tungabhadra Project. It consists of 6 treatments, replicated 5 times

The treatments are:

1) No manure (2) Growing dhaincha and ploughing it 'insitu'.
3) Applying 2500 lb. of daincha (green leaf) per acre.
4) " 5000 lb. -do-
5) " 7500 lb. -do-
6) " 10,000 lb. -do-

All the treatments received a basal dressing of 200 lb. of Super phosphate per acre by placement method. The daincha was grown in treatment No.2 and it was ploughed in after taking the yields. The yields of daincha in treatment No.2. in all the replications are given below.

Replication	No.I.	12,900 lb. per acre.
"	II.	16,700 lb. "
"	III.	13,300 lb. "
"	IV.	14,300 lb. "
"	V.	15,300 lb. "

Daincha crop grown in non-experimental bulk area of the farm was cut and applied for the rest of treatments 3,4,5,6; at 2500, 5000, 7500 and 10000 lb. respectively and ploughed in. Lakshmi Cotton was dibbled on 28-8-52 in all the six treatments. Germination was satisfactory in all the plots and the crop is in growth. During growing period it is observed that crop is stunted in growth and looks pale green in no manure plots while in other treatments, the vigour and growth are on the increase with the increase in dosage of green manure.

2) Korra manurial Experiment:-This is laid out to find the optimum dose of manure to the korra crop. It consists of 10 treatments with 0,10 lb, 20 lb. of P2 05 per acre in combination with 20,40 and 60 lb. of nitrogen per acre with no P2 05 and no nitrogen as control. This was sown on 5.7.52. The crop has not yet been harvested.

3) Super phosphate experiment on paddy:- The experiment was conducted to study the relative merits of super phosphate and semi acidulated phosphate on paddy crop. This consists of 6 treatments randomised 5 times. The treatments are:

1. Control. (2) Groundnut cake at 40 N per acre.
3. Groundnut cake at 40 N plus super phosphate at 80 lb. P2 05 (Broadcast).
4. Groundnut cake at 40 N plus semi acidulated phosphate at 80 lb. P2 05 (Broadcast).
5. Groundnut cake at 40 N plus semi acidulated phosphate at 80 lb. P2 05 (placed).
6. Groundnut cake at 40 N plus super phosphate at 80 lb. P2 05(placed).

The manure was applied at a depth of 4" in treatments 5 and 6 and transplanting was done on 8.8.52.

The crop is poor and stunted in growth without tillering in no manure treatment, while it is better in treatment No.2. and best in treatments 3 and 6 and without marked difference between treatments 4 and 5 (i.e.) Super in combination with Groundnut cake looks better.

II. Varietal Trials:-

1. Groundnut (Spreading) varietal Experiment:- This is laid out with local, TMV.1, TMV.3, TMV.4. and A.H.4354, to find out the best yielder of spreading Groundnut, in randomised blocks replicated 6 times. The sowing was done on 12.7.52. No appreciable difference in stand is noted for various treatments.

2. Red-Gram varietal Experiment:- Six varieties of Red gram namely 37, 72, 2900, H.39, Udgir and Jagudam were tried in Randomised blocks and replicated 6 times. The crop sown on 7.7.52, is in growth with profuse branching. Plants are withering to a small extent due to wilt and percentage of mortality is being observed in each plot, to determine the resistance to wilt. No marked difference is noticed in stand and vigour of crop in various treatments.

III. CULTURAL TRIALS:-

Rotational Trials:- Four rotational trials of 3 year course and 4 year course, both in deep and shallow soils were laid out in randomised blocks. The treatments in each rotation are the following.

Three year course Rotation Experiment:-

1. Groundnut-Red gram, Cotton, Korra.
2. Jonna, Groundnut-Red gram, Cotton.
3. Cotton, Groundnut- Red gram, Jonna.

Four year course Rotation Experiment:-

1. Groundnut & Red gram- Cotton-Wheat ~~ed~~ after green manure-Jonna.
2. Jonna-Green manure followed by wheat- Cotton-Groundnut & Redgram.
3. Green manure followed by wheat- Groundnut & Redgram-Jonna-Cotton.
4. Cotton-Jonna-Groundnut & Redgram- Green manure followed by wheat.

The trials are laid out to find out the economic rotation for the project area both in deep and shallow soils.

IV. CHEMICAL STUDIES:-

1. Fundamental experiment on the effect of light irrigation on movement of salts in Black soils:-

This was ~~laid~~ laid out, to find out whether there will be any deleterious effects on physico-chemical properties of the Black soils of Tungabhadra project, by continuous light irrigation. It consists of 5 treatments namely:

1. No irrigation. (2) Ryots method. (3) 2" of irrigation once in 15 days.
4. 3" of irrigation once in 15 days.
5. 3" of irrigation once in 30days.

H.A.11. cotton was sown in this experiment on 30.8.52. Germination in no irrigation treatment was not noted. Germination was noted in other treatments after irrigation and the same is satisfactory. The progress of growth is poor in all the plots. All the treatments except treatment No.1, was irrigated on 1.9.52 after sowing.

B. NON-REPLICATED TRIALS:-

1) Sesamum Trial:- To find out the suitable type of Sesamum, TMV.1, TMV.2, and TMV.3. were grown under trial. The crop will be harvested shortly. This was sown on 14.7.52 and TMV.2. is white gingelly and four capsuled. TMV.1. and 3 had better growth and vigour than TMV.2.

2) Sweet potato varietal Trial:- Seven varieties of sweet potato are under trial to find out the best suited variety for the project area. The varieties are 1) Local red, (2) Local white (3) Jersey big stem, (4) I.B.22, (5) I.B.24 (6) I.B.33 and (7) I.B.5941. These were planted on 1.7.52 and not yet come to harvest. Variety I.B.22 is having good growth and ~~white~~ Jersey big stem, is having poor growth.

3) Groundnut (Bunch) varietal trial:- Five varieties of Groundnut (Bunch) are under trial. They are, Local, TMV.1, TMV.2., A.H.4111, and A.H.4218. This is conudcted to find out the highest yielder of Bunch variety of Groundnut. The date of sowing the trial was 11.7.52.

4) Castor Trial:- Three varieties of castor, TMV.1., TMV.2. and TMV.3 are under trial to find out the best yielder. They were sown on 14.7.52

5) Paddy varietal and seasonal trial:- Paddy varieties, Co.2, A.S.D.5 of long duration, in 3 series, and A.D.T.18, M.T.U.15 of short duration in 2 series, are to be tried in different seasons commencing raising of nurseries from 16.8.52 to 5.9.52 and planting them after 25 to 30 to find out the best season and variety for late season in

The planting of first series was done on 16.9.52 with the above four varieties. The varieties are under observation.

6) Trial on method and time of application of ammonium sulphate to paddy:-

In Japan, it ~~was~~ has been found that best results were obtained when ammonium sulphate was applied 2" to 3" below the surface for paddy crop. To find out whether the same will hold good, the trial was conducted with the following treatments namely (1) ammonium sulphate at 40 N per acre, applied broadcast 30 days after planting. (2) Applied 2/3 of ammonium sulphate at 2" to 3" depth at the time of planting and 1/3 applied one month after planting at 2" to 3" depth, keeping the total nitrogen supplied at 40 lb. N per acre. This depth is achieved by mixing sulphate with clay and preparing small round pellets of uniform size and placing them at the required depth. (3) Same as treatment (2) but ammonium sulphate was applied broadcast without mixing with clay.

A basal dressing of 30 lb. P_2O_5 was applied in all the treatments. The planting of paddy G.E.B.24 was done on 2.8.52 and the crop has not yet come to harvest. In the early stages crop was best in growth and vigour in treatment No.2, and better in treatment No.3, and treatment No.1. The growth will be watched in later stages.

7) Groundnut (Bunch) Bacterial treated vs. Non-treated:-

To find out, whether the bacterial treatment to the seed will induce better growth and yield, a small area was sown on 11.7.52 with groundnut bunch seed treated with the bacterial culture and in another plot with untreated seed. The crop is under observation. No marked difference is noticed in growth ~~in~~ the two treatments.

C. INTRODUCTION OF NEW CROPS:-

1. Eucalyptus:- Three varieties of Eucalyptus namely E.Robusta, E.Rostrata and E.Citridora were sown in nursery on 20.6.52 and only E.Citridora has germinated and others failed to germinate. The Citridora seedlings are in nursery and they are not healthy and growth is much stunted.

2. Bastard Sago:-The seeds sown on 20.6.52 in nursery did not germinate.

3. Indigofera teysmanii:- The seeds of Indigofera sown in nursery on 19.6.52 germinated and 12 seedlings were planted ~~recently~~ on 26.9.52 and their performance is being watched.

D. ENTOMOLOGICAL TRIALS:-

Work on cholam fly (Atherigona indica):- This is a serious pest of Hingari jonna in the seedlings stage and causes much damage to the crop. Therefore to study the control measures of the pest, different trials namely, Insecticidal, manurial, cultural and flooding trials were laid out to study the efficacy of insecticides DDT and BHC at different strengths and effects of manures at different doses and of cultural practices. The work is under progress.

To study the incidence of cholam fly on mungari jonna also, counts of fly attacked plants of jonna in 16 varieties were taken at weekly intervals and the following conclusions are drawn.

1. The percentage of incidence in no variety has gone beyond 8.
2. No infestation was noticed during 4th week in any of the varieties.
3. N.J. and A.S.8360 are the most affected.
4. A.S.8363 and A.S. 8369 are the least affected.

Life history of the fly:- The life history of the cholam fly was studied under laboratory condition from egg to adult and found that the (1) egg hatched out between 1½ to 2 days (2) Maggot pupated on 9th day of its emergence (3) Adult emerged on 7th day after pupation ~~(i.e.)~~

1. Egg period 1½ to 2 days.
2. Larval period 9 days.
3. Pupal period 7 days.

Attempts were made to rear the fly maggots on sugar solution and none of them lived longer than a week, and they survived up to 4 days without any food.

Attempts were also made to rear the maggots on maize and korra, but with not success. Rearing of maggots was also tried on decaying materials of maize. Out of the 5 maggots, 3 died in 2 days, one pupated without growing to its normal size on the 3rd day, and the remaining one was not active. To study whether the flies live on decaying materials of Jonna, 4 flies were caged and given the rotten material of jonna seedling stems. None survived more than 4 days. Rearing of maggots on maize are decaying material and that of flies on jonna decaying material are still under study.

Cotton:- To study th control measures of cotton boll worms, jassids and aphids with BHC, DDT, and sulphur, a trial was laid out with H.A.11 cotton and Lakshmi cotton. The experiment was sown on 16.8.52.

MISCELLANEOUS:-

1. Vanamohostva:- The following programme was gone through during the quarter under report, were planted and planted the following.

1. Gliricidia cuttings.	....	3330
2. Gliricidia seedlings.	....	5155
3. Ficus cuttings.	....	10
4. Delonix regia cuttings.	....	8
5. Neem seedlings.	....	38
6. Albezzia seedlings.	....	32
7. Tamarind seedlings.	....	32

2. Sesbania speciosa:- Sesbania speciosa seedlings 43487 were planted all over the farm, along the field borders and irrigation channels.

3. Coconut seedlings:- During the quarter under report 90 coconut seedlings brought from Agricultural Research Station, Tindivanam were planted on the farm.

4. Reclamation of waste land to step up Revenue:- An area of 0.30 acre in I.8. behind the cattle shed was brought under plough and kept ready for planting guinea and other grasses to increase the fodder resources of the farm.

An area of 4 cents was added to field No.II.5. and 2 cents to field No.II.6 on the western side of the fields along the main road leading to the reservoir. Thus an area of 36 cents was brought into cultivation during the quarter under report.

5. Farmers' Day:- Farmers' day was celebrated on 25.9.52. Janab M.Obaidullah Shah, Deputy Director of Agriculture, Cuddapah presided and a large number of both officials and ryots visited the farm. The ryots were advised the various achievements of research in raising good and profitable crops under irrigation when the ayacut of Tungabhadra project develops. In this connection an exhibition was also arranged where in all the improvements of agricultural research were exhibited. The ryots were very much pleased to see the promising crops like Jonna, paddy, sugarcane, cotton etc. on the farm and they were also fully convinced of the benefits of irrigation in black soils, when no alkalinity resulted even after continued light and heavy irrigation. The Veterinary department, the Secretary, Bellary District groundnut and cotton marketting committee, plant protection staff of mycology and entomology, Assistant Cotton Specialist and his staff, Imperial Chemical Industries Inspector took part in the functions and meeting of the day. The District staff and local Tahsildar arranged to get good number of ryots to witness the celebration on the farmers' day. About 200 ryots were present for the function.

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6. Horticulture:- Five hundred cuttings of pomegrana ere taken and planted in the nursery for rooting, on 8, 9 and 11.8.52. They have sprouted and potting will be taken up shortly. The percentage of sprouting was 56 ~~percent~~.

ii) A total number of 290 Mango stones and 100 lime seeds collected locally were raised in nursery on 20.9.52 and after sprouting they will be potted.

iii) Guavas:- The trees are in bearing and the development of fruits was not satisfactory.

iv) Pomegranates:- The trees are in full bearing and the fruits are developing well.

v) Papaya:- The plants are in bearing.

BAGAWADI DEMONSTRATION FARM.

The season was not favourable on the whole and the water supply to the farm was regular in the month of July and all the mungari sowings were done. An area of 9.00 acres of Co.9. Jonna, 8.50 acres of patcha jonna, 7.3 acres of korra, 12.88 acres of Korra-pathi mixture, 2.95 acres of chillies, 0.60 acre of paddy, 42.8 acres of cotton and 2.00 acres of Hingari Jonna, was sown. Thus 86.03 acres were sown during the quarter under report.

The water supply was regular in the month of July and it was not so in the month of August and September to some extent. Hence mungari jonna could not be irrigated adequately for want of sufficient water.

Two observation trials are conducted on the farm, one with cotton M.A.2. and Lakshmi; and the other with Hingari jonna varieties M.31-2, M.47-3, and M.9.3.1-2. They are under observation.

The ryots are convinced of the advantages of irrigation and they have realised the benefits of raising crops in Black soils under irrigation.

B.W./-

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S U M M A R Y.

The south west monsoon was a partial failure. All the mungari crops were sown in time as per the cropping scheme.

The early crops have not yet come to harvest except fodder jonna and fodder maize which gave an acre yield of 12924 lb. and 12700 lb. per acre respectively.

Nine Randomised and replicated ~~total of nine~~ trials were laid out during the quarter to determine the suitable varieties of Red gram and Groundnut (Spreading), the optimum dose of green manure for Black soils of Tungabhadra project area, the economic rotation for deep and shallow soils, the optimum dose of manure for korra and paddy. The fundamental experiment was continued to find out the effect of light irrigations on the movement of salts. The experiments have not yet come to harvest.

In addition to the above replicated trials seven non-replicated trials on Groundnut, Sesamum, Castor, Sweet potato and paddy were conducted to find out the suitable variety in the same and two more observational trial were conducted to find out the time and method of application of ammonium sulphate to paddy and to find out whether bacterial treatment will induce better growth and yield in Groundnut (Bunch).

The work on cholam fly, cotton jassids, Boll worms, aphids is under progress.

New crops of Bastard sago, Eucalyptus Robusta, E.Rostrata, E.Citrodora and Indigofera Leysmanii have been sown to observe the performance.

Attempts are being made to extend the area under fruits on the farm and multiplication of pomegranates was under-taken for distribution and nurseries of Mango and Lime were sown.

Farmers' day was celebrated on 25.9.52 during the quarter under report.

Bagawadi Demonstration Farm:- The water supply was in sufficient during the greater part of the quarter and an area of 86.03 acres was sown in the quarter. Two observational trials one in cotton and the other in Hingari jonna were conducted. The crops have not yet been harvested. Ryots have well realised the beneficial results of raising crops under irrigation and more ryots now want to join the farm.

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